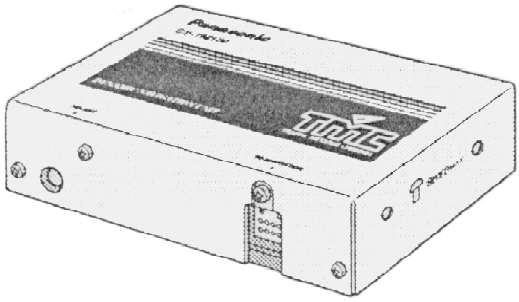
ORDER No. ACED020589C2

Service Manual

AUTOMOTIVE CONSUMER ELECTRONICS

CY-TM100N

Dynamic Navigation Unit



SPECIFICATIONS

Specification*	
General	
Power Supply	**DC 12V (11V - 16V), Test Voltage 14.4V Negative Ground**
Current Consumption	**Less than 0.3A**
Dimensions**	**150(W)×30(H)×100(D)mm**
Weight**	**0.45kg**

*** Specifications and the design are subject to possible modification without notice due to improvements.**
**** Dimensions and Weight shown are approximate.**

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are marked by ⚠ in the Schematic Diagrams, Circuit Board Diagrams, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

1. FEATUERS

- Corresponding to RDS-TMC.

- Transportation of trafic-information to Navigation system.

2. REPLACE THE FUSE

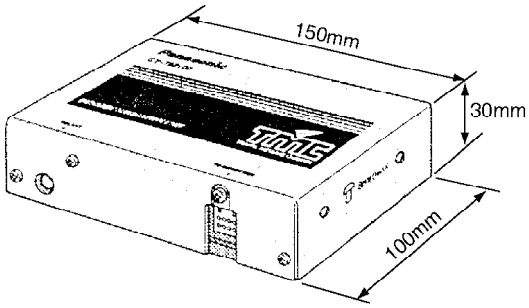
Use fuses of the same specified rating 3 amps. Using different substitutes or fuses with higher ratings, or connecting the product directly without a fuse, could cause fire or damage to the stereo unit.

3. MAINTENANCE

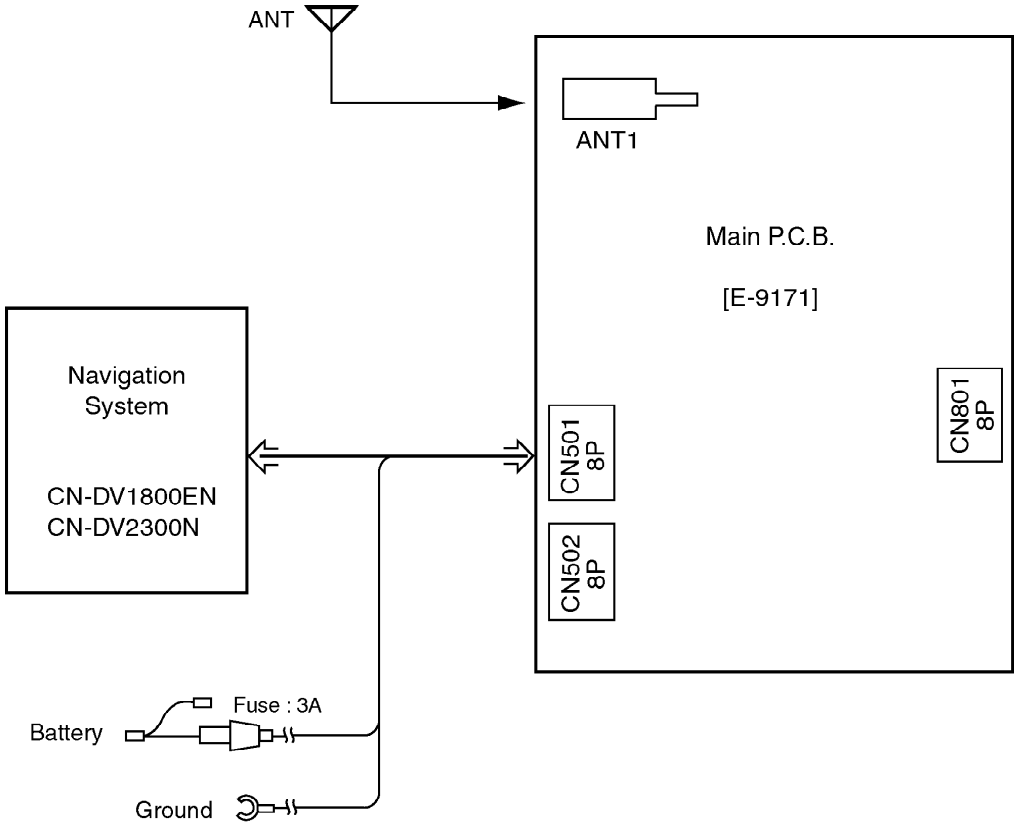
Use a dry, a soft cloth to wipe it.

Never use solvents such as benzine and thinners they may mar the surface of unit.

4. DIMENSIONS



5. WIRING CONNECTION



6. BLOCK DIAGRAM

7. TERMINALS DESCRIPTION

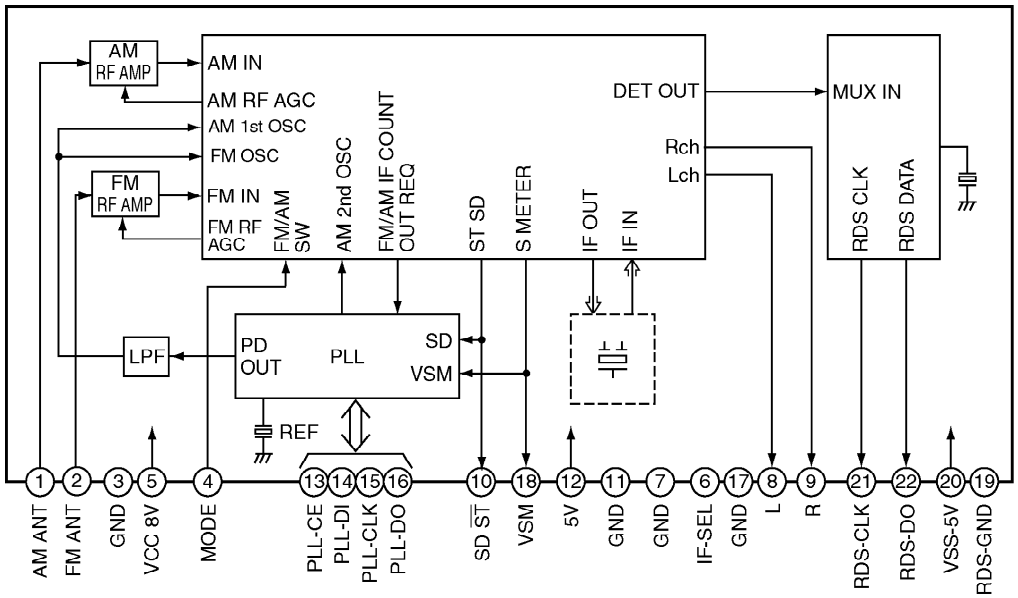
7.1. Main Block Block

IC601 : C2CBJG000220

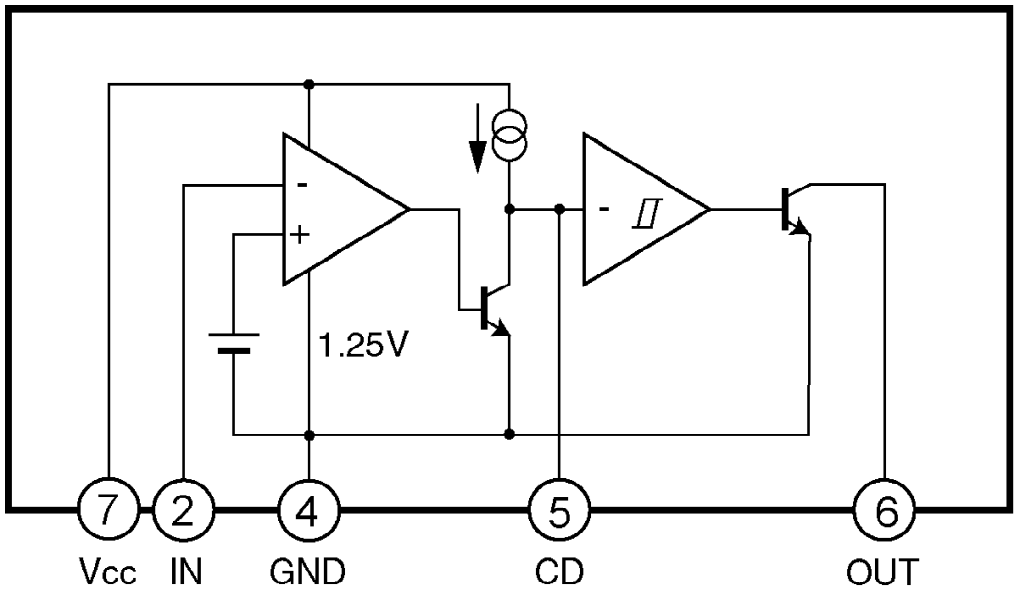
Pin No.	Port	Descriptions	I/O	Vol (V)
1-3	-	(+5V pull-up)	-	5.0
4	AVSS	Ground	-	0
5,6	-	(+5V pull-up)	-	5.0
7	AVREF	+5V power supply	-	5.0
8	RXD2	Communication data receive	I	5.1
9	TXD2	Communication data send	O	5.1
10	ASCK2	Not used	-	-
11	SI1	Serial data	I	5.1
12	SO1	Serial data	O	5.1
13	/SCK1	Data shift clock	O	0
14,15	-	(+5V pull-up)	-	5.0
16	PLL_DO	PLL data	I	5.1
17	PLL_DI	PLL data	O	0
18	PLL_CLK	PLL data shift clock	O	5.1
19	PLL_CE	PLL chip enable	O	0
20-32	-	(+5V pull-up)	-	5.0
33	VSS	Ground	-	0
34-39	-	(+5V pull-up)	-	5.0
40	SD	FM Stereo detection	I	0
41-55	-	(+5V pull-up)	-	5.0
56	TC		I	5.1
57	TEST		I	0
58	-	(+5V pull-up)	-	5.0
59	RDS.DATA	RDS data	I	2.8
60	RESET	Reset input	I	5.1
61,62	-	(+5V pull-up)	-	5.0
63	RDS.CLK	RDS data shift clock	I	2.6
64-66	-	(+5V pull-up)	-	5.0
67	VSS	Ground	-	0
68	VDD	+5V power supply	-	5.0
69	X2	Crystal oscillator terminal	-	3.2
70	X1	Crystal oscillator terminal	-	2.5
71	VPP	(Ground pull-down)	-	0
72	XT2	Not used	-	-
73	XT1	(Connecting to ground)	-	0
74	VDD	+5V power supply	-	5.0
75	AVDD	+5V power supply	-	5.0
76	VSM	S-meter level input	I	0.4
77-80	-	(+5V pull-up)	-	5.0

8. PACKAGE AND IC BLOCK DIAGRAM

PA1 : C5EA00000078



IC604 : YEAMM957BFE1



9. REPLACEMENT PARTS LIST

Notes :

1. **Be sure to make your orders of replacement parts according to this list.**
2. **Important safety notice: Components, identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.**
3. **Location keys in the remarks column indicates the general location of the parts shown in the exploded drawing, as in a road map.**

4. **The marking (RTL) indicates that Retention Time is limited for this item. After the discontinuation of assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependent on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.**

Ref. No.	Part No.	Part Name & Description	Remarks
[E9171] Main Block			
ICs AND TRANSISTORs			
IC501	C0JBAZ000525	IC	
IC601	C2CBJG000220	IC	
IC604	YEAMM957BFE1	IC	
PA1	C5EA00000078	Electronic Tuner	
Q600	B1GDCFJJ0002	Transistor	
Q602	B1GBCFJJ0002	Transistor	
Q700	B1BBAC000007	Transistor	
Q701	YEANB1261ZT	Transistor	
Q702	B1ABCF000044	Transistor	
Q703	YEAND1899ZE1	Transistor	
DIODEs			
D501	MA153TX	Diode	
D502	MA153TX	Diode	
D503	MA153TX	Diode	
D700	YEADDAM3MA47	Diode	
D701	YEADEC10DS1	Diode	
D704	YEADRD56M3T1	Diode	
D705	MA736TX	Diode	
D706	YEADRD91M1T2	Diode	
CAPACITORs			
C14	YECUZ1C104KX	Ceramic, 0.1 μ F 16WV	
C401	F1H1E103A011	Ceramic, 0.01 μ F 25WV	
C402	ECA1CM220I	Electrolytic, 22 μ F 16WV	
C404	F1H1E103A011	Ceramic, 0.01 μ F 25WV	
C405	ECA1CM470I	Electrolytic, 47 μ F 16WV	
C406	F1H1E103A011	Ceramic, 0.01 μ F 25WV	
C407	YECUS1H103JX	Ceramic, 0.01 μ F 50WV	
C408	ECA1AM331I	Electrolytic, 330 μ F 10WV	
C409	ECA1AM331I	Electrolytic, 330 μ F 10WV	
C501	YECUZ1E104ZF	Ceramic, 0.1 μ F 25WV	
C502	YECUS1H471JC	Ceramic, 470PF 50WV	
C503	YECUS1H471JC	Ceramic, 470PF 50WV	

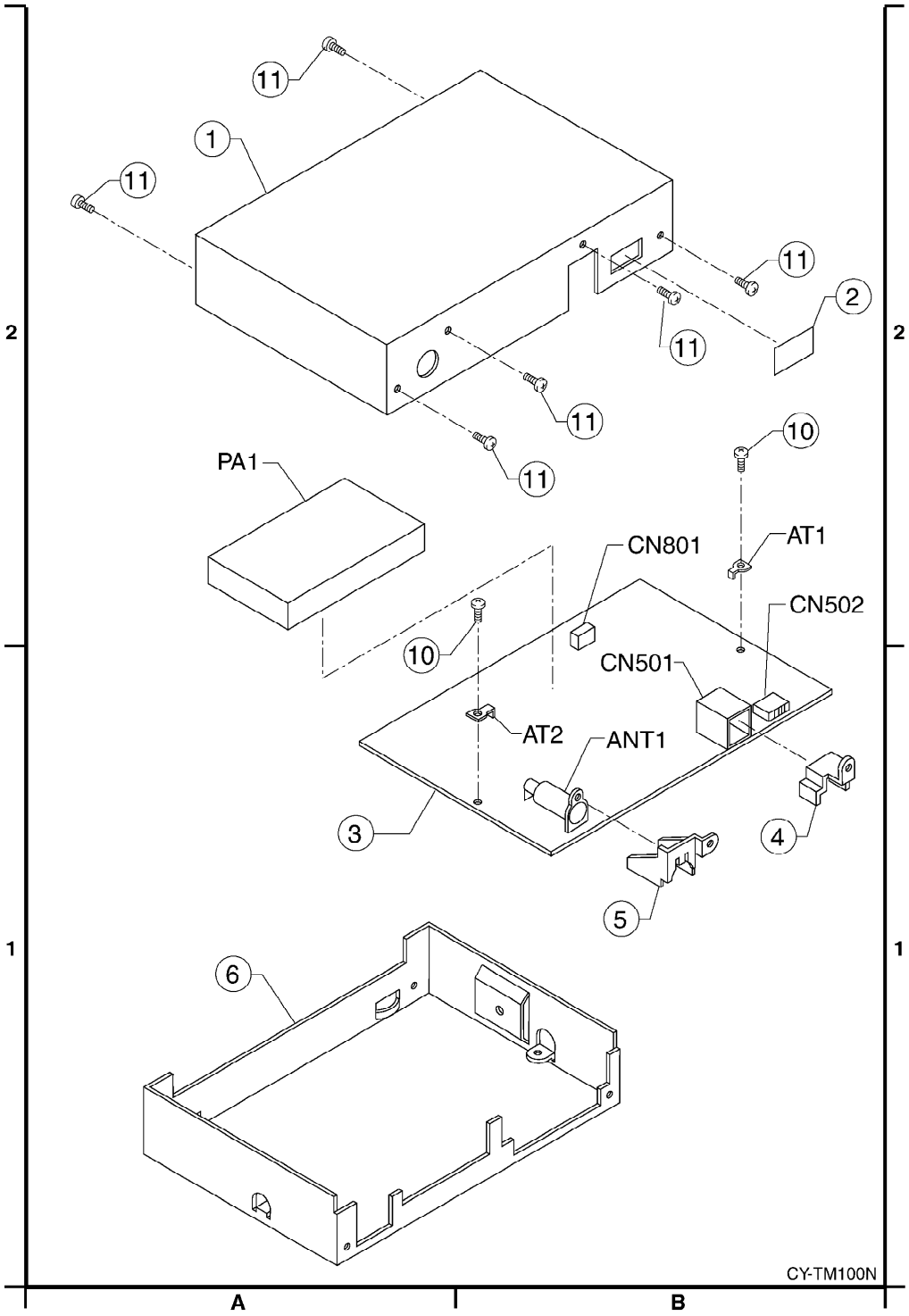
Ref. No.	Part No.	Part Name & Description	Remarks
C504	YECUZ1H103KX	Ceramic, 0.01 μ F 50WV	
C601	YECUZ1H102KX	Ceramic, 0.001 μ F 50WV	
C602	YECUZ1C104KX	Ceramic, 0.1 μ F 16WV	
C603	ECA1AM331I	Electrolytic, 330 μ F 10WV	
C604	YECUZ1H150JC	Ceramic, 15PF 50WV	
C605	YECUZ1H150JC	Ceramic, 15PF 50WV	
C606	ECA1AM331I	Electrolytic, 330 μ F 10WV	
C607	YECUS1H103JX	Ceramic, 0.01 μ F 50WV	
C608	YECUS1H103JX	Ceramic, 0.01 μ F 50WV	
C609	YECUZ1C104KX	Ceramic, 0.1 μ F 16WV	
C610	ECA1AM331I	Electrolytic, 330 μ F 10WV	
C611	YECUZ1E104ZF	Ceramic, 0.1 μ F 25WV	
C612	YECUZ1E104ZF	Ceramic, 0.1 μ F 25WV	
C613	YECUZ1A224KX	Ceramic, 0.22 μ F 10WV	
C614	YECUZ1H102KX	Ceramic, 0.001 μ F 50WV	
C700	YECUZ1E104ZF	Ceramic, 0.1 μ F 25WV	
C701	ECA1CM220I	Electrolytic, 22 μ F 16WV	
C703	ECA1CM221I	Electrolytic, 220 μ F 16WV	
C704	ECA1CM100I	Electrolytic, 10 μ F 16WV	
C705	YECUZ1E104ZF	Ceramic, 0.1 μ F 25WV	
C706	ECA0JM101I	Electrolytic, 100 μ F 6.3WV	
C713	ECA1CM221I	Electrolytic, 220 μ F 16WV	
C714	ECA1AM101I	Electrolytic, 100 μ F 10WV	
C715	YECUZ1E104ZF	Ceramic, 0.1 μ F 25WV	
C716	ECA1AM101I	Electrolytic, 100 μ F 10WV	
C720	ECA1CM102B	Electrolytic, 1000 μ F 16WV	
C721	ECA1CM102B	Electrolytic, 1000 μ F 16WV	
RESISTORs			
L402	ERJ8GEY0R00V	Chip, 0 Ω 1/8W	
L403	ERJ8GEY0R00V	Chip, 0 Ω 1/8W	
R75	ERJ3GEYJ102V	Chip, 1k Ω 1/16W	
R401	ERJ8GEY0R00V	Chip, 0 Ω 1/8W	
R402	ERJ3GEYJ822V	Chip, 8.2k Ω 1/16W	
R403	ERJ3GEYJ102V	Chip, 1k Ω 1/16W	
R404	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R405	ERJ6ENF4702	Chip, 47k Ω 1/10W	
R406	ERJ3GEYJ102V	Chip, 1k Ω 1/16W	
R407	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R408	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R420	ERJ8GEY0R00V	Chip, 0 Ω 1/8W	
R421	ERJ8GEY0R00V	Chip, 0 Ω 1/8W	
R422	ERJ3GEY0R00V	Chip, 0 Ω 1/16W	
R501	ERJ6GEYJ101	Chip, 100 Ω 1/10W	
R502	ERJ6GEYJ101	Chip, 100 Ω 1/10W	
R503	ERJ6GEYJ101	Chip, 100 Ω 1/10W	

Ref. No.	Part No.	Part Name & Description	Remarks
R504	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R505	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R506	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R600	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R601	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R602	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R603	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R604	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R605	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R606	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R607	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R608	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R609	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R610	ERJ3GEYJ102V	Chip, 1k Ω 1/16W	
R611	ERJ3GEYJ102V	Chip, 1k Ω 1/16W	
R612	ERJ3GEY0R00V	Chip, 0 Ω 1/16W	
R613	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R614	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R615	ERJ3GEYJ102V	Chip, 1k Ω 1/16W	
R616	ERJ3GEYJ102V	Chip, 1k Ω 1/16W	
R617	ERJ3GEYJ102V	Chip, 1k Ω 1/16W	
R618	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R619	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R620	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R621	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R622	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R623	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R624	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R625	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R626	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R627	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R628	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R629	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R630	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R631	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R632	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R633	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R634	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R635	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R636	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R637	ERJ3GEYJ102V	Chip, 10k Ω 1/16W	
R638	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R639	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R640	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R641	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R642	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R643	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R644	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R645	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R646	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R647	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	

Ref. No.	Part No.	Part Name & Description	Remarks
R648	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R649	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R650	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R651	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R652	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R653	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R654	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R655	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R656	ERJ3GEYJ102V	Chip, 1k Ω 1/16W	
R657	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R658	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R659	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R660	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R661	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
R662	ERJ3GEYJ333V	Chip, 33k Ω 1/16W	
R663	ERJ3GEYJ220V	Chip, 22 Ω 1/16W	
R664	ERJ3EKF3901V	Chip, 3.9k Ω 1/16W	
R665	ERJ3EKF2202V	Chip, 22k Ω 1/16W	
R666	ERJ3EKF1002V	Chip, 10k Ω 1/16W	
R667	ERJ3GEYJ472V	Chip, 4.7k Ω 1/16W	
R668	ERJ3GEY0R00V	Chip, 0 Ω 1/16W	
R700	ERJ6GEYJ100	Chip, 10 Ω 1/10W	
R701	ERJ6GEYJ222	Chip, 2.2k Ω 1/10W	
R702	ERJ6GEYJ562	Chip, 5.6k Ω 1/10W	
R703	ERJ12YJ102H	Chip, 1k Ω 1/2W	
R704	ERJ6GEYJ472	Chip, 4.7k Ω 1/10W	
R705	ERJ6GEYJ472	Chip, 4.7k Ω 1/10W	
R706	ERJ6GEY0R00V	Chip, 0 Ω 1/10W	
R707	ERJ6GEY0R00V	Chip, 0 Ω 1/10W	
R708	ERJ6GEY0R00V	Chip, 0 Ω 1/10W	
R711	ERJ6GEYJ1R0	Chip, 1 Ω 1/10W	
R712	ERJ8GEYJ821V	Chip, 820 Ω 1/8W	
R714	ERJ8GEYJ821V	Chip, 820 Ω 1/8W	
R715	ERJ12YJ102H	Chip, 1k Ω 1/2W	
R801	ERJ3GEYJ103V	Chip, 10k Ω 1/16W	
CONNECTORs			
CN501	YEAE012733	Connector, 8P	
CN502	YEAE5339008	Connector, 8P	
CN801	K1MN08A00032	Connector, 8P	
CRYSTAL			
XL600	YEXL5F12582T	Crystal OSC	
COILs			
FB400	YELTBLM21P3S	Coil	
FB501	YELTBLM21P3S	Coil	
FB502	YELTBLM21P3S	Coil	

Ref. No.	Part No.	Part Name & Description	Remarks
FB503	YELTBLM21P3S	Coil	
FB504	YELTBLM21P3S	Coil	
FB506	YELTBLM21P3S	Coil	
FB601	YELTBLM21P3S	Coil	
FB602	YELTBLM21P3S	Coil	
L401	YELT03N330JT	Coil	
L404	YELT03N330JT	Coil	
L700	YETQ012G157	Coil	
R690	YELTBLM21B10	Coil	
FILTERs			
LC600	YECCL39R222T	Filter	
ZL700	YECCL55B222M	Filter	
NEON TUBE			
Z400	YEAL02012T	Neon Tube	
Accessories			
PRINTING			
	YEFM283864	Operating Instructions	
INSTALLATION PARTS			
	YEAA33144	Antenna Accessory	
	YEARCDS240	CD-ROM	
	YEFG021036	Front Brakect	
	YEFM99837	Seal	
	YEP9BS1080	Screw Kit	
	YEP9FZ3100	Tape	
Mechanical Parts			
MISCELLANEOUS			
AJ1	YEAJ071222	Cord w/Plug	
ANT1	YEAA10060	Antenna Receptacle	
AT1	YEAT03346A	Terminal	
AT2	YEAT03346A	Terminal	
1	YEFA31831	Upper Cover	
2	YEFM99594	Seal	
3	YEP0PT9171A0	PCB w/Component	RTL
4	YEFX0215862	Bracket, RDS	
5	YEFX0215985	Bracket, ANT Receptacle	
6	YEFA012019AK	Chassis	
10	YEJT03015	Tapping Screw, 3mm * 6mm	
11	XTB3+6FFZ	Tapping Screw, 3mm * 6mm	

10. EXPLODED VIEW (Unit)



11. WIRING DIAGRAM

11.1. Main Block (Top View)

11.2. Main Block (Bottom View)

12. SCHEMATIC DIAGRAM

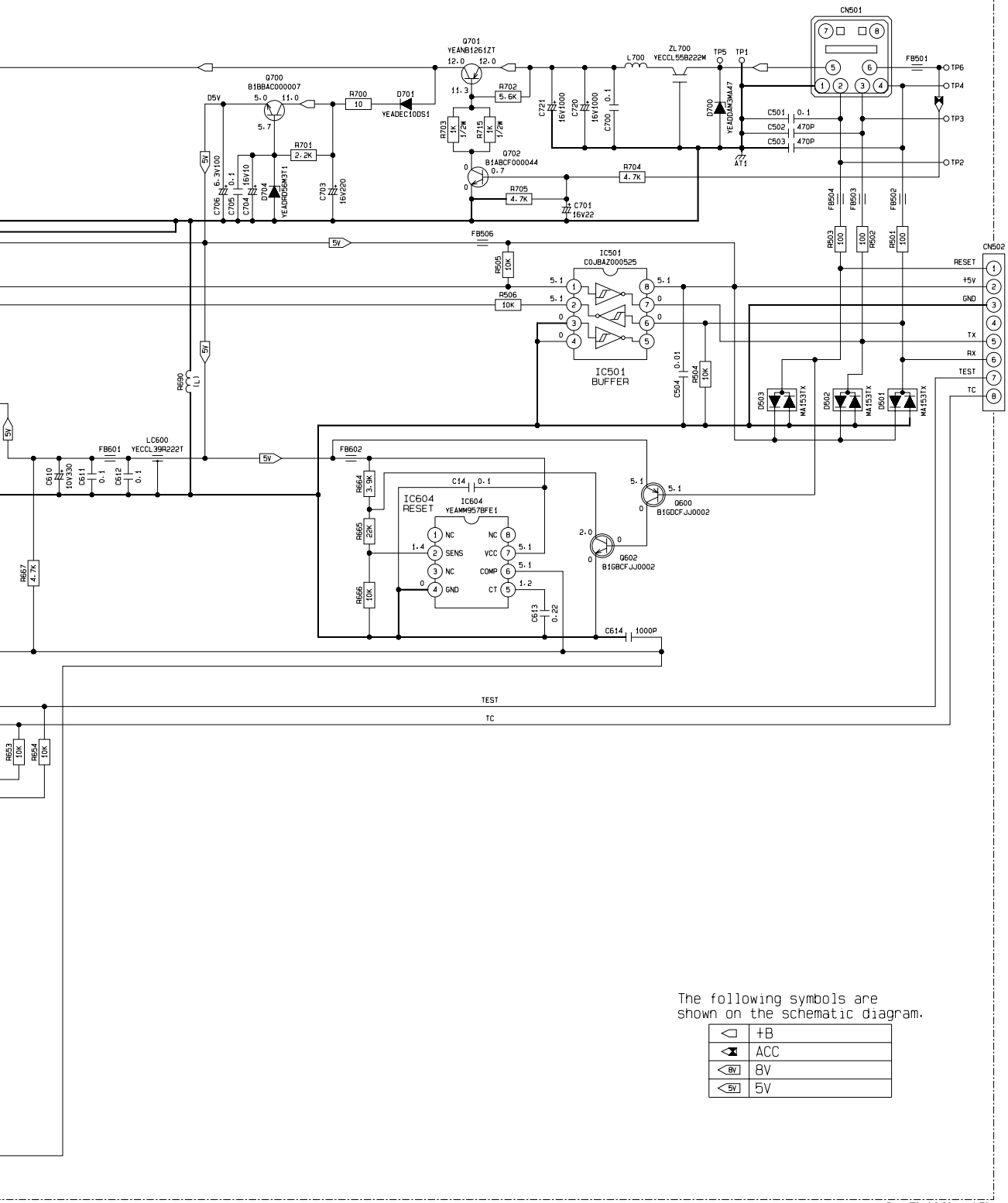
12.1. Main Block

13. SCHEMATIC DIAGRAM for Printing with A4 Size

13.1. Main Block (Left Side)

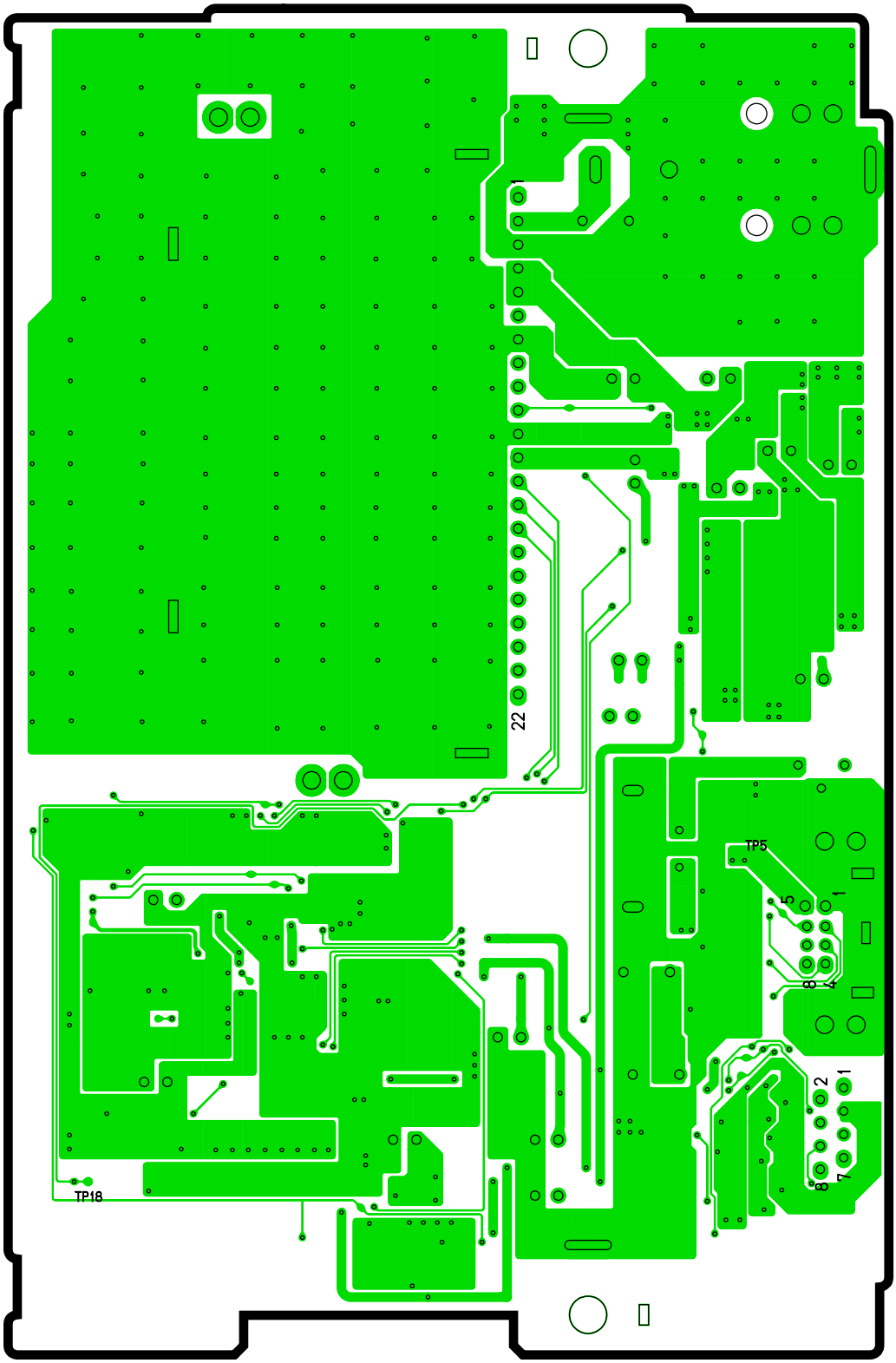
13.2. Main Block (Right Side)

E-9171

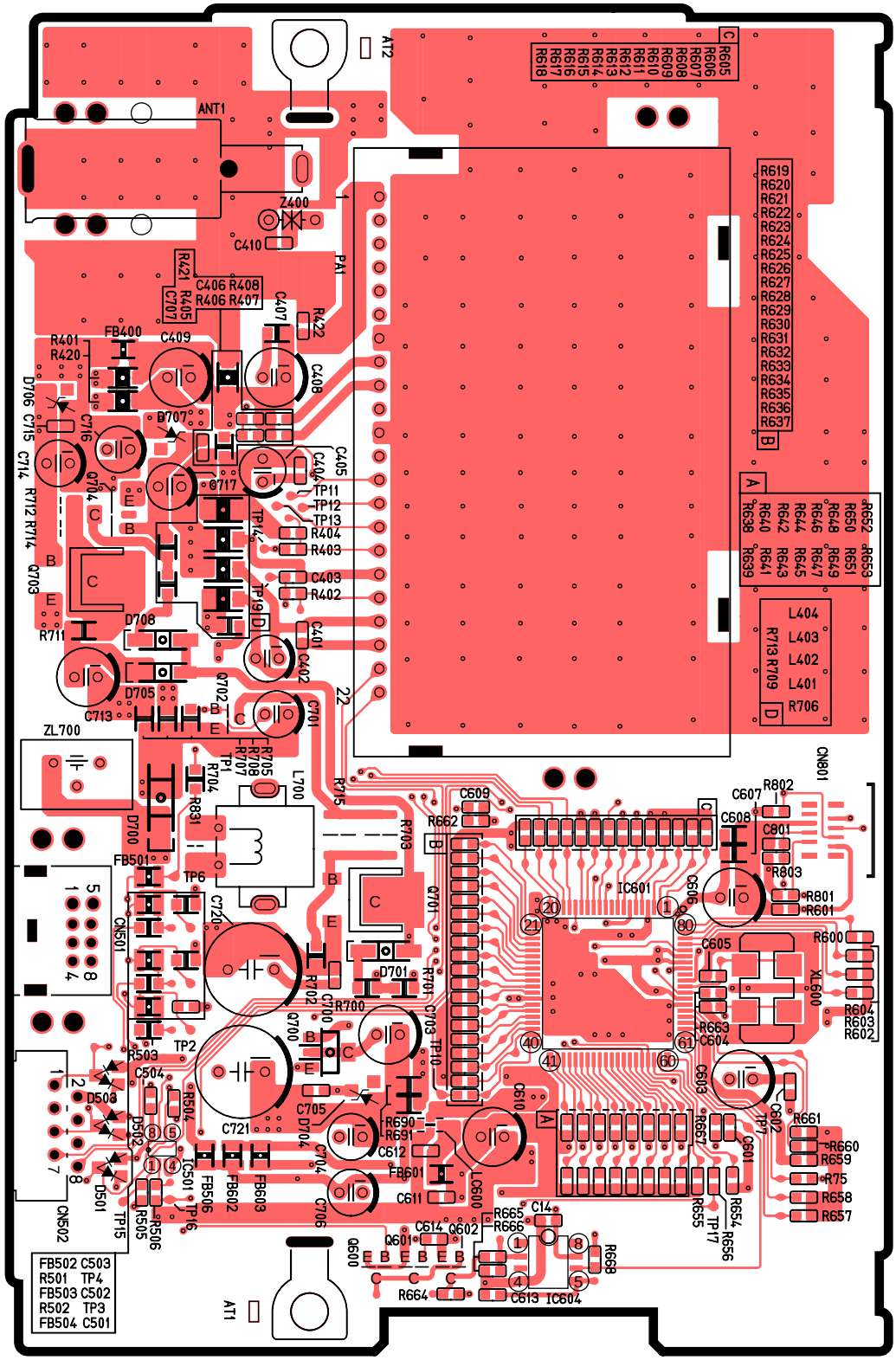


The following symbols are shown on the schematic diagram.

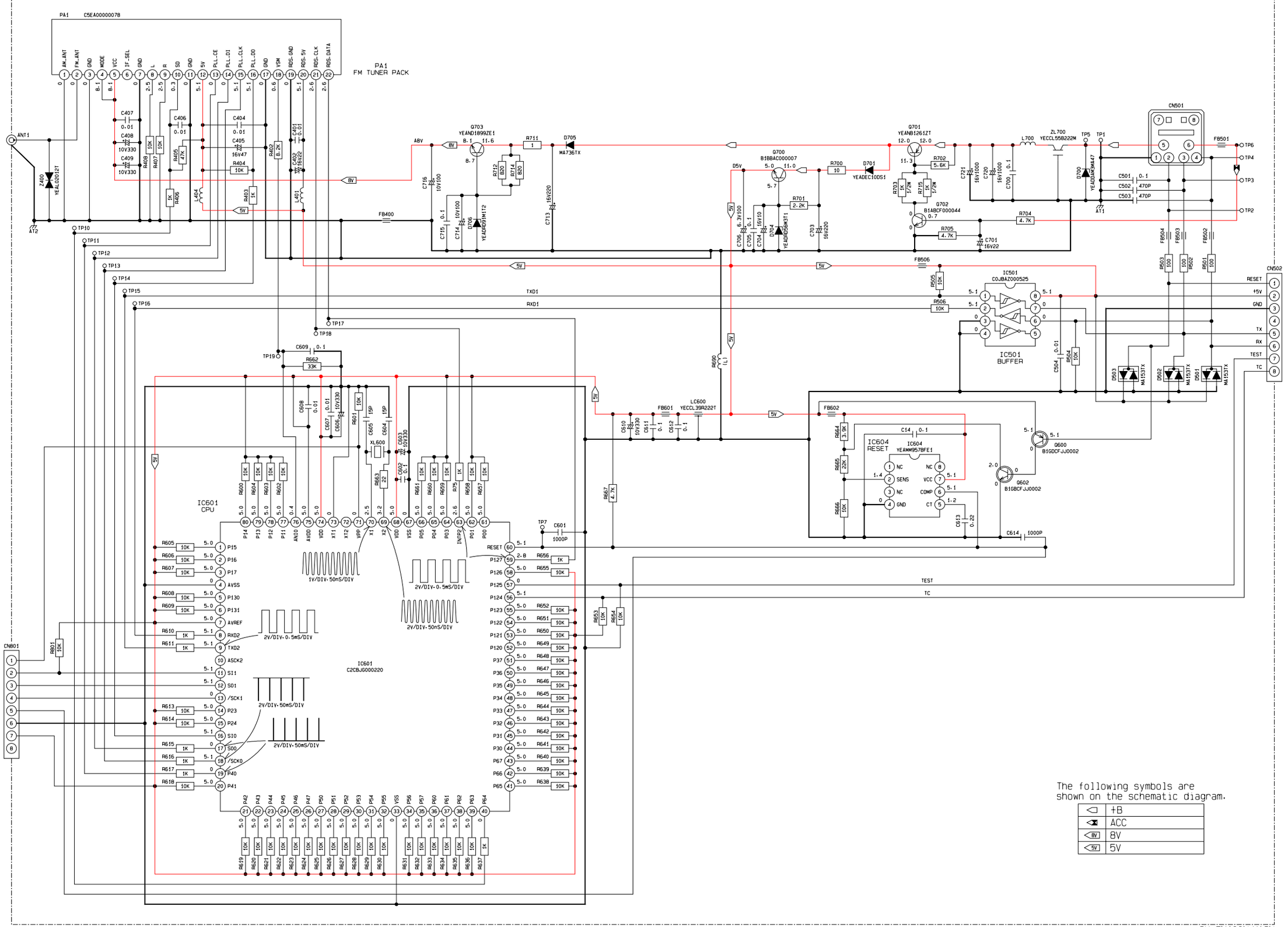
◁	+B
◁ ACC	ACC
◁ 8V	8V
◁ 5V	5V



[E-9171][Bottom View]



[E-9171][Top View]


PA1 C5EA00000078
PA1
FM TUNER PACK
IC601
CPU
IC601
C2CBJG000220
IC501
C0JBAZ000525
IC501
BUFFER
IC604
RESET
YEAMM957BFE1
Q600
B1GDCFJJ0002
Q602
B1GBCFJJ0002
Q700
B1BBAC000007
Q701
YEAN81261ZT
Q702
B1ABCF000044
Q703
YEAND1899ZE1
LC600
YECCL39R222T
ZL700
YECCL55B222M
XL600
CN501
CN502
CN801
ANT1
TP1
TP2
TP3
TP4
TP5
TP6
TP7
TP10
TP11
TP12
TP13
TP14
TP15
TP16
TP17
TP18
TP19
TXD1
RXD1
RESET
+5V
GND
TX
RX
TEST
TC
1V/DIV·50nS/DIV
2V/DIV·0.5mS/DIV
2V/DIV·50nS/DIV
2V/DIV·50mS/DIV
The following symbols are shown on the schematic diagram.
+B
ACC
8V
5V

11 SCHEMATIC DIAGRAM

11.1. Main Block